IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Russell *et al.*	**Conf. No.:**	6883
Serial No.:	10/706,546	**Art Unit:**	2167
Filing Date:	05/03/2006	**Examiner:**	Timblin, Robert M.
Title:	COMPUTER-IMPLEMENTED METHOD, SYSTEM AND PROGRAM PRODUCT FOR MAPPING A USER DATA SCHEMA TO A MINING MODEL SCHEMA	**Docket No.:**	RSW920030186US1 (IBMR-0052)

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BRIEF OF APPELLANTS

This is an appeal from the Final Rejection dated November 1, 2007, rejecting claims 1-8.

This Brief is accompanied by the requisite fee set forth in 37 C.F.R. 1.17 (c).

REAL PARTY IN INTEREST

International Business Machines Corporation is the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

As filed, this case included claims 1-31. Claims 1-31 remain pending. Claims 1-31 stand rejected and form the basis of this appeal.

STATUS OF AMENDMENTS

No amendment has been submitted in response to the After Final Rejection filed by the Office on November 1, 2007.

SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention generally relates to a computer-implemented method, system and program product for mapping a user data schema to a mining model schema. Specifically, the present invention provides dynamic and intelligent schema matching functionality in an autonomic environment.

Claim 1 claims a computer-implemented method for mapping a user data schema to a mining model schema, comprising: matching columns of the user data schema to corresponding columns of the mining model schema to provide a mapping by performing a number of unique types of matching processes in sequence until a match is found (see e.g., paras. 0028-0032; Fig. 1, item 32), wherein at least one of the number of matching processes does not utilize a matching resource that is external (see e.g., paras 0028-0029; Fig. 1, item 32); determining whether data within matching columns of the user data schema has a data type different than data within the corresponding columns of the mining model schema (see e.g., para. 0033; Fig. 1, item 34); transforming the data within the matching columns of the user data schema if the data type is

determined to be different (see e.g., para. 0033; Fig. 1, item 0036); and updating the matching resource based on the mapping (see e.g., para. 0036; Fig. 1, item 42).

Claim 9 claims a computer-implemented method for mapping a user data schema to a mining model schema, comprising: populating a schema consolidation table with names of columns of the mining model schema (see e.g, para. 0027; Fig. 1, item 30); mapping the user data schema to the mining model schema by matching columns of the user data schema to corresponding columns of the mining model schema by performing a number of unique types of matching processes in sequence until a match is found (see e.g., paras. 0028-0032; Fig. 1, item 32), wherein at least one of the number of matching processes does not utilize an external matching resource (see e.g., paras 0028-0029; Fig. 1, item 32); determining whether data within matching columns of the user data schema has a data type different than data within the corresponding columns of the mining model schema (see e.g., para. 0033; Fig. 1, item 34); transforming the data within the matching columns of the user data schema if the data type is determined to be different (see e.g., para. 0033; Fig. 1, item 0036); providing an opportunity to manually alter the mapping after transforming the data (see e.g., para. 0034; Fig. 1, item 38); presenting a final view of the mapping after providing the opportunity to manually alter the mapping (see e.g., para. 0035; Fig. 1, item 40); and updating a matching resource and the schema consolidation table based on the mapping (see e.g., para. 0036; Fig. 1, item 42).

Claim 16 claims a computerized system for mapping a user data schema to a mining model schema, comprising: a processor; and a memory, the memory including: a column matching system for matching columns of the user data schema to corresponding columns of the mining model schema to provide a mapping (see e.g., paras. 0028-0032; Fig. 1, item 32); a model differentiation system for determining whether data within matching columns of the user

data schema has a data type different than data within the corresponding columns of the mining model schema by performing a number of unique types of matching processes in sequence until a match is found (see e.g., paras. 0028-0032; Fig. 1, item 32), wherein at least one of the number of matching processes does not utilize an external matching resource (see e.g., paras 0028-0029; Fig. 1, item 32); a data transformation system for transforming the data within the matching columns of the user data schema if the data type is determined to be different (see e.g., para. 0033; Fig. 1, item 0036); and an update system for updating a matching resource based on the mapping (see e.g., para. 0036; Fig. 1, item 42).

Claim 24 claims a program product stored on a recordable medium for mapping a user data schema to a mining model schema, which when executed, comprises: program code for matching columns of the user data schema to corresponding columns of the mining model schema to provide a mapping by performing a number of unique types of matching processes in sequence until a match is found (see e.g., paras. 0028-0032; Fig. 1, item 32), wherein at least one of the number of matching processes does not utilize an external matching resource (see e.g., paras 0028-0029; Fig. 1, item 32); program code for determining whether data within matching columns of the user data schema has a data type different than data within the corresponding columns of the mining model schema (see e.g., para. 0033; Fig. 1, item 34); program code for transforming the data within the matching columns of the user data schema if the data type is determined to be different (see e.g., para. 0033; Fig. 1, item 0036); and program code for updating a matching resource based on the mapping (see e.g., para. 0036; Fig. 1, item 42).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-31 are rejected under 35 U.S.C. §102(e) as allegedly being unpatentable over Gorelik (U.S. Patent Pub. No.2005/0055369), hereafter "Gorelik."

ARGUMENT

1. REJECTION OF CLAIMS 1- 31 UNDER 35 U.S.C. §102(e) OVER GORELIK

Appellants respectfully submit that the rejection of claims 1-31 under 35 U.S.C. 102(e) over Gorelik is defective.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987); see MPEP ' 2131, p. 2100-69. Because each and every element of claims 1-31 is not found in Gorelik, Appellants respectfully request overrule of the rejection under 35 U.S.C. 102(e).

In the above referenced Final Office Action, the Examiner alleges that Gorelik teaches matching by performing a number of types of matching processes in sequence until a match is found. The Office equates this feature with the transformation discovery of Gorelik. Final Office Action, page 3, citing Gorelik, paras. 0370-0383. However, the passage of Gorelik cited by the Office in support of this argument discloses that "…given a binding condition and correlation between…column[s], discover the transformation function." To this extent, Gorelik requires that a correlation already has been made between columns prior to the discovery of the transformation function. As such, Gorelik does not teach that its transformation discovery is for matching columns to other columns, but rather for transforming data after a correlation has been established. Furthermore, the transformation discovery of Gorelik does not perform different

types of discoveries, but rather performs the same type of discovery, that is, discovering what type (e.g., numeric, string) that the data must be transformed to/from. Furthermore, Gorelik does not perform one type of discovery process, then a different type of discovery process, etc. until a match, much less a column match, is found. Thus, unlike the claimed invention, Gorelik does not teach a number of unique types of matching processes performed in sequence until a column match is found.

In contrast, the claimed invention includes "…matching columns of the user data schema to corresponding columns of the mining model schema to provide a mapping by performing a number of unique types of matching processes in sequence until a match is found." Claim 1 and similarly in claims 9, 16 and 24. As such, discovery process of Gorelik that has the single process of discovering what type of data is present after a correlation has been made, the claimed invention matches columns of the user data schema to corresponding columns of the mining model schema to provide a mapping by performing a number of unique types of matching processes in sequence until a match is found. For the above reasons, the matching of columns of the claimed invention is not taught by the discovery process of Gorelik.

CONCLUSION

In summary, Appellants submit that claims 1-31 are allowable because Gorelik fails to teach each and every feature of the claimed invention.

Respectfully submitted,

/ /

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CLAIMS APPENDIX

Claim Listing:

1. A computer-implemented method for mapping a user data schema to a mining model schema, comprising:

matching columns of the user data schema to corresponding columns of the mining model schema to provide a mapping by performing a number of unique types of matching processes in sequence until a match is found, wherein at least one of the number of matching processes does not utilize a matching resource that is external;

determining whether data within matching columns of the user data schema has a data type different than data within the corresponding columns of the mining model schema;

transforming the data within the matching columns of the user data schema if the data type is determined to be different; and

updating the matching resource based on the mapping.

2. The method of claim 1, further comprising:

providing an opportunity to manually alter the mapping after transforming the data; and

presenting a final view of the mapping after providing the opportunity, wherein the updating step is performed after the final view is presented.

3. The method of claim 1, wherein the matching step comprises determining whether names of the columns of the user data schema exactly match names of the columns of the mining model data schema.

4. The method of claim 3, wherein the matching step further comprises determining whether the names of the columns of the user data schema are similar to the names of the columns of the mining model data schema based on the matching resource.

5. The method of claim 4, wherein the matching step comprises determining whether the names of the columns of the user data schema match the names of the columns of the mining model schema based on one or more formulae.

6. The method of claim 5, wherein the matching step further comprises determining whether the data within the columns of the user data schema corresponds to the data within the columns of the mining model data schema.

7. The method of claim 1, wherein the matching resource is selected from the group consisting of a thesaurus, a dictionary and a similarity threshold.

8. The method of claim 1, further comprising:

populating a schema consolidation table with names of the columns of the mining model schema, prior to the matching step; and

updating the schema consolidation table with names of the matching columns of the user data schema, during the updating step.

9. A computer-implemented method for mapping a user data schema to a mining model schema, comprising:

populating a schema consolidation table with names of columns of the mining model schema;

mapping the user data schema to the mining model schema by matching columns of the user data schema to corresponding columns of the mining model schema by performing a number of unique types of matching processes in sequence until a match is found, wherein at least one of the number of matching processes does not utilize an external matching resource;

determining whether data within matching columns of the user data schema has a data type different than data within the corresponding columns of the mining model schema;

transforming the data within the matching columns of the user data schema if the data type is determined to be different;

providing an opportunity to manually alter the mapping after transforming the data;

presenting a final view of the mapping after providing the opportunity to manually alter the mapping; and

updating a matching resource and the schema consolidation table based on the mapping.

10. The method of claim 9, wherein the matching step comprises determining whether names of the columns of the user data schema exactly match names of the columns of the mining model schema.

11. The method of claim 10, wherein the matching step further comprises determining whether the names of the columns of the user data schema are similar to the names of the columns of the mining model data schema based on the matching resource.

12. The method of claim 11, wherein the matching step comprises determining whether the names of the columns of the user data schema match the names of the columns of the mining model schema based on one or more formulae.

13. The method of claim 12, wherein the matching step further comprises determining whether the data within the columns of the user data schema corresponds to the data within the columns of the mining model data schema.

14. The method of claim 9, wherein the matching resource is selected from the group consisting of a thesaurus, a dictionary and a similarity threshold.

15. The method of claim 9, wherein the step of updating the schema consolidation table comprises updating the schema consolidation table with names of the matching columns of the user data schema.

16. A computerized system for mapping a user data schema to a mining model schema, comprising:

a processor; and

a memory, the memory including:

a column matching system for matching columns of the user data schema to corresponding columns of the mining model schema to provide a mapping;

a model differentiation system for determining whether data within matching columns of the user data schema has a data type different than data within the

corresponding columns of the mining model schema by performing a number of unique types of matching processes in sequence until a match is found, wherein at least one of the number of matching processes does not utilize an external matching resource;

a data transformation system for transforming the data within the matching columns of the user data schema if the data type is determined to be different; and

an update system for updating a matching resource based on the mapping.

17. The system of claim 16, further comprising:

a manual matching system for providing an opportunity to manually alter the mapping after transforming the data; and

a view system for presenting a final view of the mapping after providing the opportunity.

18. The system of claim 16, wherein the column matching system determines whether names of the columns of the user data schema exactly match names of the columns of the mining model data schema.

19. The system of claim 18, wherein the column matching system further determines whether the names of the columns of the user data schema are similar to the names of the columns of the mining model data schema based on the matching resource.

20. The system of claim 19, wherein the column matching system further determines whether the names of the columns of the user data schema match the names of the columns of the mining model schema based on one or more formulae.

21. The system of claim 20, wherein the column matching system further determines whether the data within the columns of the user data schema corresponds to the data within the columns of the mining model data schema.

22. The system of claim 16, wherein the matching resource is selected from the group consisting of a thesaurus, a dictionary and a similarity threshold.

23. The system of claim 16, further comprising a table population system for populating a schema consolidation table with names of the columns of the mining model schema, wherein the update system further updates the schema consolidation table with names of the matching columns of the user data schema.

24. A program product stored on a recordable medium for mapping a user data schema to a mining model schema, which when executed, comprises:

program code for matching columns of the user data schema to corresponding columns of the mining model schema to provide a mapping by performing a number of unique types of matching processes in sequence until a match is found, wherein at least one of the number of matching processes does not utilize an external matching resource;

program code for determining whether data within matching columns of the user data schema has a data type different than data within the corresponding columns of the mining model schema;

program code for transforming the data within the matching columns of the user data schema if the data type is determined to be different; and

program code for updating a matching resource based on the mapping.

25. The program product of claim 24, further comprising:

program code for providing an opportunity to manually alter the mapping after transforming the data; and

program code for presenting a final view of the mapping after providing the opportunity.

26. The program product of claim 24, wherein the program code for matching determines whether names of the columns of the user data schema exactly match names of the columns of the mining model data schema.

27. The program product of claim 26, wherein the program code for matching further determines whether the names of the columns of the user data schema are similar to the names of the columns of the mining model data schema based on the matching resource.

28. The program product of claim 27, wherein the column matching system further determines whether the names of the columns of the user data schema are similar to the names of the columns of the mining model schema based on one or more formulae.

29. The program product of claim 28, wherein the program code for matching further determines whether the data within the columns of the user data schema corresponds to the data within the columns of the mining model data schema.

30. The program product of claim 24, wherein the matching resource is selected from the group consisting of a thesaurus, a dictionary and a similarity threshold.

31. The program product of claim 24, further comprising a program code for populating a schema consolidation table with names of the columns of the mining model schema, wherein the program code for updating further updates the schema consolidation table with names of the matching columns of the user data schema.

EVIDENCE APPENDIX

No evidence is entered and relied upon in the appeal.

RELATED PROCEEDINGS APPENDIX

No decisions rendered by a court or the Board in any proceeding are identified in the related appeals and interferences section.